

DESMONEMA FRAGOSUM FROM THE NORTHERN TRANSCAAL.

By I. C. VERDOORN.

Desmonema fragosum Verdoorn sp. nov. ramis lateralibus valde abbreviatis tumidisque, pseudoracemis 2—4 cm. longis, foliis cordatis petiolis 2—7 cm. longis, staminis 6 basi connatis distinguitur.

Caules scandentes, sub-succulentes, fragosi, 0·5—3 cm. diam. glabri. *Rami* laterales valde abbreviati, tumidi, cicatricosi, ramulis ultimis deciduis. *Folia* hysterantha; petiolus 2—7 cm. longus, glaber: lamina firme herbacea, orbiculare-ovata base profunde cordata, 3—8 cm. longa, 3—8 cm. lata, glaber. *Pseudoracemi* 2—4 cm. longi: bracteae 1—3 mm. longae. *Flores* dioici; ♂ sepala 6 lata ovata 3 exteriora 1·5 mm. longa 1 mm. lata, 3 interiora 3·5 mm. longa 2·5 mm. lata; petala 6 obovata 2 mm. longa 1·5 mm. lata, saepe obscure et irregulariter subcrenata: stamina 6 basi solum connata, 2·5 mm. longa; filamenta 1·5 mm. longa: antherae rima longitudinali lateraliter dehiscentes: ♀ sepala 6, 3 exteriora 2 mm. longa, 1·25 mm. lata, 3 interiora concava 4 mm. long. 3 mm. lata; petala 6 obovata 2 mm. longa 1·5 mm. lata: staminodia 6 petalas opposita, 2 mm. longa; carpella 3, breve stipitata; ovarium basi stipitatum, articulatum, oblique ovoideum; stigma subsessile terminale. *Drupae* coccineae, inaequilateraliter ovoideae, 10 mm. longae 7 mm. diam.; exocarpium pulposum; endocarpium cartilagineum dorso convexum, costatum, verrucosum, ventre sub-planum concavum; condylium sub-globosum; albumen ruminata.

Hab. Transvaal; Zoutpansberg Dist. on slopes western extremity of Zoutpansberg range *Obermeyer*, *Schweickerdt* and *Verdoorn* 136; Waterpoort *v.d. Merwe* 1452 (type ♂) Wylies Poort *v.d. Merwe* 2185 (type ♀) 2185.A (immature fruit) 2185.B (fruit and leaves) and 2151 (leaves only); Dongola Botanic Reserve near Messina *Pole Evans* 4552. Lydenburg Dist. Lulu Mts., Farm Avontuur, *Barnard* 58.

In 1910 a comprehensive monograph of the family *Menispermaceae* by L. Diels was published in *Pflanzenreich* Vol. IV, 94. Possibly owing to the plants being dioecious and the amount of variation of several of the characters of this family the genera are not very clearly defined, with the result that it has been a problem to decide into which genus to place this plant. It falls in the tribe *Tinosporae*, the seed being albuminous.

the endocarp verrucose and a condylus (knuckle-like intrusion on the ventral surface of the seed) present. In this tribe the genera *Tinospora* and *Desmonema* are closely related. They are distinguished in the key as follows:—

Stamens 6, free, rarely somewhat connate at the base *Tinospora*.

*Stamens 6, connate *Desmonema*.

In our specimens the stamens are connate at the base only, coming out as a cluster when the flower is dissected. On this character it might go into either genus for some species of *Desmonema* are said to be connate at the base only. Taking the characters point for point in the two generic descriptions our plant would appear to agree more closely with *Tinospora*. On the other hand, the petals and stamens in *Tinospora* are described as being adnate to the gynoeceum, whereas they are not so in our plant, and all but one of the species of *Tinospora* are extra-African. The one African species comes from Senegambia and is not at all like our plant according to its description. Diels writes, too, that *Desmonema* is very close to *Tinospora* and takes the place of that genus in Africa south of the Sudans. Further, he transfers three species originally described from these southern regions under *Tinospora* to *Desmonema*. On these grounds I am placing the plant under discussion in the genus *Desmonema*, giving as complete a description as possible, that is, not taking generic characters for granted. This species seems to have no very near affinity with any of the species so far described in either of the abovementioned genera. From *Desmonema caffra*, which occurs in Natal and is so far the only one described from South Africa, it differs principally in the thick stems, hysteranthous leaves, short racemes and the stamens being 6, not 3, in number.

A remarkable characteristic of *Desmonema fragosum* is its tendency to break and subsequently to send out string-like roots which grow towards the ground, sometimes from a height of 12 feet. This character is mentioned as occurring quite frequently in the tribe *Tinosporeae*. The lateral branches are much abbreviated and swollen and bear the transverse scars of the early deciduous racemes and leafy shoots. The flowers appear in spring in pseudo-racemes up to 4 cm. long. All the other described species have the inflorescence much longer, about 10—30 cm. long. The numerous small drupes about 10 mm. long and 7 mm. diameter are very decorative, ripening to a bright orange red just when the clear apple-green leaves appear. These leaves are deeply cordate and are

*As a matter of interest it may be mentioned that the stamens in *Desmonema* may be 6 or 3. Diels mentions this in his description of the genus, but has left it out in the key quoted above.

borne on petioles about as long as or longer than the blade and of the same green colour.

When planting sticks of this climber it was puzzling to know the top from the bottom. Three opinions found it difficult to agree. It seemed feasible to assume that the abbreviated branches curved upwards. This was accepted and the slips were planted accordingly. Two grew normally in this way, but the third, after a period of dormancy, put out its string-like roots from the top, and when these had reached the ground there seemed to be a deadlock, the growing point being firmly embedded in the soil !

About the distribution of this species, Dr. F. Z. v.d. Merwe, who has observed it for some years, writes : " I have seen it all along the northern slopes of the Zoutpansberg from east to west and on koppies between the Zoutpansberg range and the Limpopo river. Also along the Olifants river (Pietersburg district) east of Malipsdrift associated with large trees round which it winds and over which it sprawls, usually, but not always, in rocky localities."

Mr. W. G. Barnard of Sekukuniland, Lydenburg district, collected it on the Lulu mountains and has supplied to the National Herbarium the following interesting notes on its uses by the natives, who call it " Penyaleng " - " Used as a Turkish or mustard bath. Patient to drink one pint of bath water whilst bathing—for rheumatics and other bodily pains. Very bitter. Where there is no bath available water is boiled in pots and the stem and leaves placed therein. The patient is covered with a blanket or hide and the steaming pot placed with him. Hot flint stones are thrown into the pot to make steam. This is continued for an hour, daily, for several days."



PLATE XVIII.

Desmonema fragorum.

1, Outer sepals. 2, Inner sepals. 3, Female, petals with staminodes; male, petals.

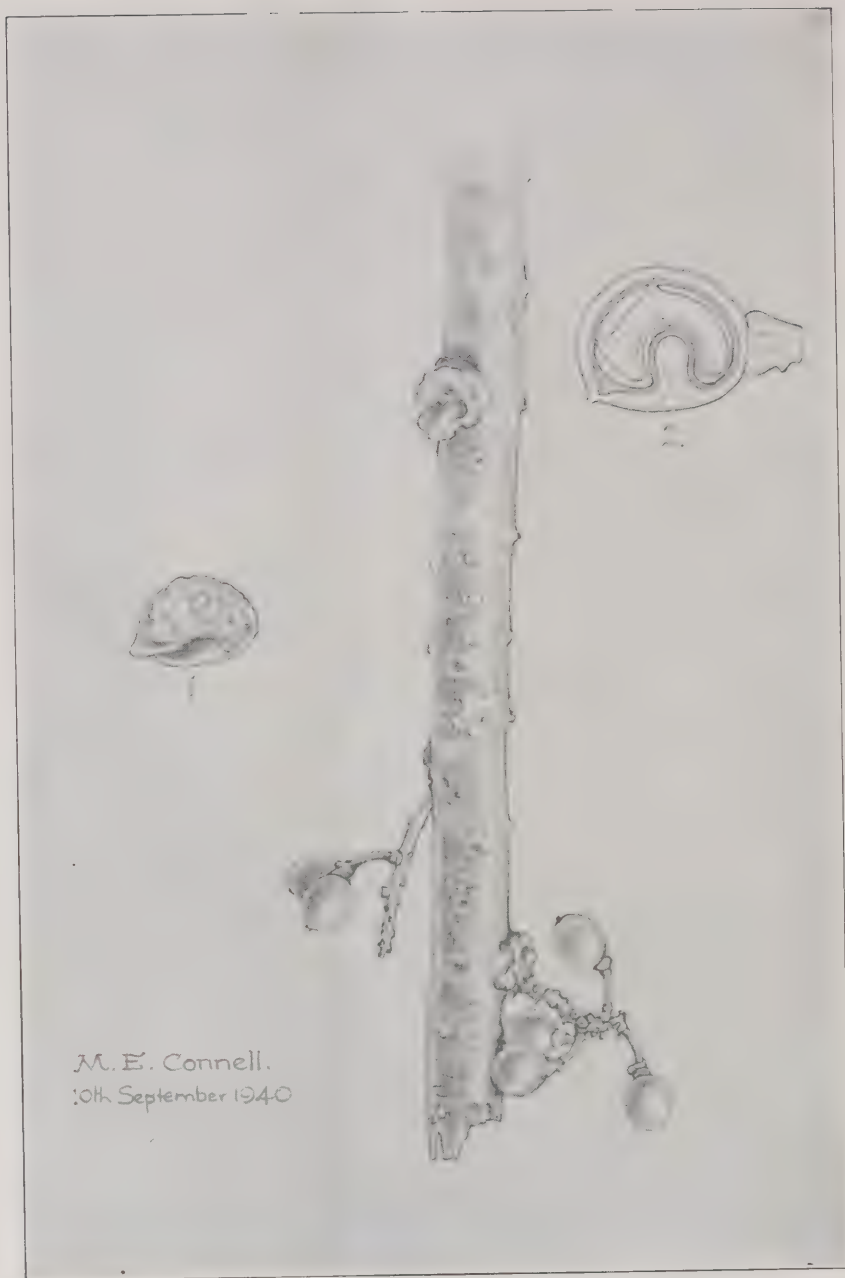


PLATE XIX. *Desmonema fragosum*. Immature fruiting specimen. (Fruit green.)
 1. Seed showing cavity on under surface, ridge over back and verrucose surface.
 2. Longitudinal section of fruit showing the shape of the condylus and the runcinate albumen.



PLATE XX. George Rattray.